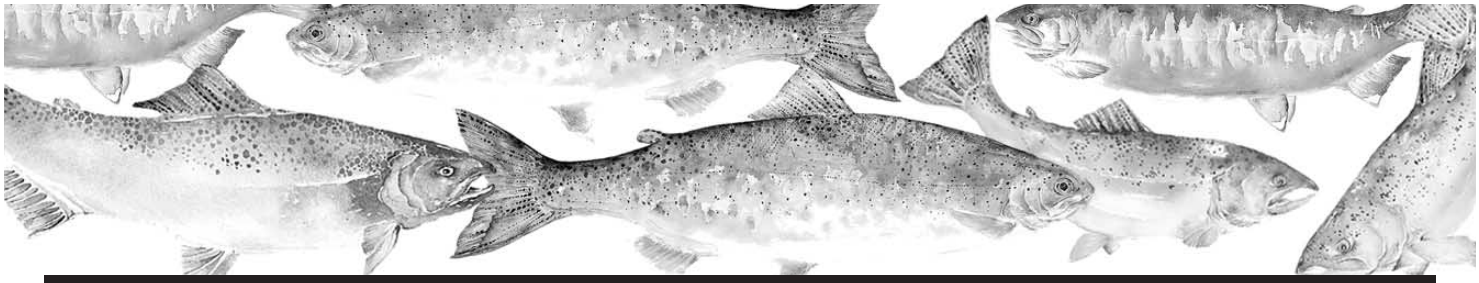

Clark County, Washington **Endangered Species Act** *Information*

Steelhead

Oncorhynchus mykiss
Other names: steelhead trout, sea-run rainbow trout
Average size: 8-11 lbs, up to 40 lbs
Spring spawner: summer and winter runs

In March 1998, the National Marine Fisheries Service listed Columbia River steelhead trout as a threatened species under the Endangered Species Act. Because Clark County is located on the Lower Columbia River, we must take measures to protect steelhead.

What are steelhead?

Steelhead are anadromous fish, which means they are born in freshwater, migrate to the ocean, then return to freshwater to spawn. Anadromous fish benefit from both freshwater and marine habitats. Freshwater streams have fewer predators and are safer for the development of young fish. Marine habitats have more abundant food and may support more rapid growth and larger fish.

Habitat requirements

Steelhead need clean, cool water with plenty of oxygen and low amounts of suspended solids and contaminants. They also need gravel and rocks to spawn. Fine sediment can be lethal to steelhead. It clogs the spaces between the rocks and gravel, buries the eggs, and prevents flowing water from reaching the eggs. The oxygen-rich water allows fish to breathe beneath the gravel and also carries away any waste that the incubating embryos create. Sediment can damage the gills of adult steelhead. In extreme cases, suspended sediment can choke and suffocate fish.

Steelhead also require large woody debris and deep pools in rivers to provide refuge from predators and resting places during storms. Deep pools also give steelhead cool water when shallow areas warm up in the summer.

Life history

Summer run steelhead migrate into freshwater from the ocean between May and October. Winter run steelhead return to their rivers of origin to spawn between November and April.

Steelhead prefer streams in the highest reaches of the watershed, in areas that are steeply sloped where the streambeds have large gravel and rock. Adult fish spawn in areas where the gravel on the streambed is small enough for fish to dig nests for egg laying and incubation.

Eggs hatch in the summer. Young steelhead like very fast water, and move to steeper areas where water flows more quickly. They live in the eddies behind large rocks, allowing the river to bring them insects, salmon eggs, and small fish to eat. As they grow, the young fish gradually move into deeper but relatively swift

water with coarser streambed gravel.

After hatching, steelhead typically spend one to three years in freshwater before migrating to the ocean. After spending an average of one to three years in the ocean, they migrate back to freshwater to spawn. Unlike most salmon, steelhead may spawn more than once.

Steelhead have a very complex life history. While they exhibit general patterns in the timing of migration and spawning, there is tremendous variation in these patterns. Specific stocks and individuals may show considerable variation from the patterns described above.

Why are healthy runs of wild salmon and steelhead declining?

As Clark County's human population has boomed, its fish population has plummeted. The relatively high numbers of returning salmon in 2000, while encouraging, should not be misinterpreted as a sign that everything is fine. Fish populations in our region have always fluctuated, but the overall trend continues downward. While natural phenomena such as flooding, predators, and ocean currents affect salmon populations, human activity poses by far the greatest threat to salmon survival. The effects of human activity on fish populations have been many decades in the making and will take many decades to remedy. The four main areas of human activity that threaten salmon are known as the four Hs:

- **HARVEST:** Commercial and sports fishing directly reduce fish populations.
- **HATCHERIES:** Artificial production facilities produce domesticated fish that threaten the ability of wild fish to survive when they interbreed with the wild fish.
- **HYDROPOWER:** Dams block salmon migration up and down rivers and inundate fish habitat.
- **HABITAT:** Streams, rivers, estuaries, marine waters, and surrounding flood plains are being steadily degraded by human activities that increase soil erosion, reduce the amount of woody debris in streams, raise the water temperature, add contaminants to the water, decrease water flow, and create barriers to fish passage. Diminishing habitat and loss of habitat complexity increases vulnerability to predators.

For information about salmon recovery in Clark County, contact the Clark County Endangered Species Program at (360)397-2022 or www.saveoursalmon.com.

CLARK COUNTY WASHINGTON

good for FISH good for US